

WHAT IS CLAIMED IS:

1. A functional high-strength adhesive sheet comprising:  
a polyethylene layer;  
5 a nonwoven fabric in which the polyethylene is pressed  
to its one surface; and  
a functional polyethylene layer pressed to the other  
surface of the nonwoven fabric.
- 10 2. The functional high-strength adhesive sheet as set  
forth in claim 1,  
wherein the nonwoven fabric has a weight of 25g to 70g  
per square meter.
- 15 3. The functional high-strength adhesive sheet as set  
forth in claim 1,  
wherein the functional polyethylene layer is a  
polyethylene compound manufactured by providing a functional  
group to a pure polyethylene, grafting the provided functional  
20 group to the pure polyethylene, and adding a polyolefin resin  
and additional compounds to the resulted polyethylene.

4. A system for manufacturing a functional high-strength adhesive sheet comprising:

feeding means including a roller for feeding a nonwoven fabric or a preliminary sheet formed by pressing a polyethylene to the nonwoven fabric, an unwinding roller for unwinding the nonwoven fabric or the preliminary sheet from the roller, and pressure rollers and an idle roller for maintaining a proper tensile strength of the nonwoven fabric or the preliminary sheet;

preheating means for preheating the nonwoven fabric or the preliminary sheet fed from the feed means;

feeding means for feeding a polyethylene or a functional polyethylene, including a hopper for storing the polyethylene or the functional polyethylene to be fed to the preheated nonwoven fabric or preliminary sheet, an extractor for discharging the polyethylene or the functional polyethylene from the hopper, and a die for supplying the polyethylene or the functional polyethylene discharged from the extractor to the nonwoven fabric or the preliminary sheet;

pressing means including a pressure roller and a chill roller for pressing the polyethylene or the functional polyethylene to the nonwoven fabric or the preliminary sheet;

forming means for forming a polyethylene layer or a functional polyethylene layer, including a stripper roll and a slit for uniformly distributing the polyethylene pressed on

the preliminary sheet or the functional polyethylene pressed on an adhesive sheet; and

winding means including driving rollers and a winding roller for drawing, transferring and winding the preliminary  
5 sheet or the adhesive sheet.

5. A method for manufacturing a functional high-strength adhesive sheet comprising the steps of:

(a) supplying a nonwoven fabric wound on a roller to a  
10 preheating drum via an unwinding roller, pressure rollers and an idle roller so that the nonwoven fabric is preheated by the preheating drum;

(b) supplying the preheated nonwoven fabric to a gap between a pressure roller and a chill roller;

15 (c) supplying a polyethylene on one surface of the nonwoven fabric supplied between the pressure roller and the chill roller, and then pressing the polyethylene on the nonwoven fabric;

(d) uniformly distributing the polyethylene pressed on  
20 the nonwoven fabric, thus forming a polyethylene layer;

(e) drawing and transferring a preliminary sheet provided with the nonwoven fabric and the polyethylene layer pressed thereon, and winding the preliminary sheet on a winding roller;

25 (f) replacing the roller with the winding roller,

supplying the preliminary sheet wound on the winding roller to the preheating drum via the unwinding roller, the pressure rollers and the idle roller so that the preliminary sheet is preheated by the preheating drum;

5 (g) supplying the preheated preliminary sheet to the gap between the pressure roller and the chill roller;

(h) supplying a functional polyethylene on the other surface of the preliminary sheet supplied between the pressure roller and the chill roller, and then pressing the functional polyethylene on the preliminary sheet;

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(i) uniformly distributing the functional polyethylene pressed on the preliminary sheet, thus forming a functional polyethylene layer; and

(j) drawing and transferring an adhesive sheet provided with the preliminary sheet and the functional polyethylene layer pressed thereon, and winding the adhesive sheet on the winding roller.

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6. A functional high-strength steel plate manufactured by attaching to a steel plate using a high-frequency welding method a functional high-strength adhesive sheet comprising a polyethylene layer, a nonwoven fabric in which the polyethylene is pressed to its one surface, and a functional polyethylene layer pressed to the other surface of the nonwoven fabric.

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